

Appendix 1. Edi_{peak} , Edi_{min} , and nRR changes before and after caffeine citrate administration.

	Pre-loading	Post-loading	Pre-maintenance	Post-maintenance
Edi_{peak}	7.795 [5.493–11.790]	9.810 [4.976–12.059]	8.662 [5.716–10.588]	8.562 [5.843–10.618]
Edi_{min}	2.143 [1.138–3.842]	2.427 [1.368–3.445]	1.796 [1.160–3.464]	1.812 [1.392–3.269]
nRR	50.100 [38.883–60.785]	48.340 [38.087–58.186]	46.018 [37.736–59.616]	49.084 [42.495–57.569]
BU (%)	0.516 [0.142–8.082]	1.166 [0.559–5.791]	1.346 [0.229–3.299]	0.754 [0.482–1.362]

Data is presented as median [interquartile range].

Abbreviations: BU, back up; nRR, neural respiratory rate; Edi , electrical activity of the diaphragm.

Appendix 2. Spearman correlation analysis of Edi_{peak} , Edi_{min} , phasic Edi , nRR, and BU(%).

		Edi_{peak}	Edi_{min}	Phasic Edi	nRR	BU(%)
Edi_{peak}	Rho		0.821	0.967	0.577	-0.317
	<i>p</i> -value		<0.001	<0.001	<0.001	<0.001
Edi_{min}	Rho	0.821		0.670	0.397	-0.223
	<i>p</i> -value	<0.001		<0.001	<0.001	0.001
Phasic Edi	Rho	0.967	0.670		0.598	-0.323
	<i>p</i> -value	<0.001	<0.001		<0.001	<0.001
nRR	Rho	0.577	0.397	0.598		-0.543
	<i>p</i> -value	<0.001	<0.001	<0.001		<0.001
BU(%)	Rho	-0.317	-0.223	-0.323	-0.543	
	<i>p</i> -value	<0.001	0.001	<0.001	<0.001	

Abbreviations: BU, back up; nRR, neural respiratory rate.

Appendix 3. Changes in Edi_{peak} and Edi_{min} values before and after caffeine citrate maintenance dose administration, according to perinatal/postnatal factors.

		Edi_{peak}		Edi_{min}	
		Pre-maintenance	Post-maintenance	Pre-maintenance	Post-maintenance
GA (weeks)	<28 (n=6)	10.356±4.195	11.783±5.150 ^{*a}	2.455±1.233	3.134±2.288
	≥28 (n=7)	7.089±5.291	5.700±2.346 ^{*b}	1.918±1.362	1.430±0.525
BW (g)	<1250 (n=8)	9.211±4.727	10.252±5.185 ^{*a}	2.168±1.300	2.637±2.069
	≥1250 (n=5)	7.613±5.615	5.410±2.080 ^{*b}	2.162±1.399	1.444±0.556
RDS at birth	Yes (n=7)	7.933±4.744	8.078±3.383	1.770±0.990	1.780±0.953
	No (n=6)	9.371±5.453	8.454±6.670	2.627±1.510	2.643±2.421
Ventilator mode	NIV-NAVA (n=8)	6.735±5.159	5.605±2.194 ^{*a}	1.786±1.339	1.501±0.617
	Invasive NAVA (n=5)	11.576±2.828	11.916±5.049 ^{*b}	2.773±1.013	3.034±2.341
PEEP (cmH₂O)	<6 (n=7)	8.472±3.682	8.813±5.970	2.400±1.149	2.489±2.154 ^{*a}
	≥6 (n=6)	8.742±6.462	7.424±2.625	1.892±1.477	1.651±0.540 ^{*b}
NAVA level	< 1.5 (n=8)	7.495±4.098	8.613±6.015	2.164±1.248	2.586±2.119
	≥ 1.5 (n=5)	10.360±6.074	7.705±2.623	2.169±1.479	1.515±0.441

* $p < 0.05$, between a and b.

Abbreviations: NAVA, neutrally adjusted ventilatory assist; PEEP, positive end-expiratory pressure; RDS, respiratory distress syndrome.

Appendix 4. Edi_{peak} and Edi_{min} changes after caffeine citrate discontinuation according to discontinuation-associated factors

		Edi_{peak}		Edi_{min}	
		First 24 h after discontinuation	24 to 48 h after discontinuation	First 24 h after discontinuation	24 to 48 h after discontinuation
Caffeine duration	<60 days	11.150±2.974	12.312±4.994	2.573±0.993	3.006±1.519
	≥60 days	16.693±5.572	17.732±8.968	3.011±1.211	2.963±1.605
Caffeine cumulative dose	<10 mg/day	12.298±4.071	12.598±6.391	2.785±1.353	2.734±1.813
	≥10 mg/day	15.044±6.354	17.263±8.835	2.834±0.950	3.282±1.425
PMA at caffeine cessation	<36 weeks	15.348±4.978	17.108±7.448 ^{*a}	2.651±1.124	2.851±1.443
	≥36 weeks	10.021±3.204	8.763±2.608 ^{*b}	3.054±1.049	3.388±1.887

Data is presented as mean±standard deviation.

* p <0.05, between a and b.

Abbreviations: PMA, postmenstrual age; Edi, electrical activity of the diaphragm.

Appendix 5. Clinical findings before and after caffeine citrate discontinuation.

	Before discontinuation	After discontinuation	<i>P</i>
Mean HR	149±9	144±8	0.173
MinimumHR	145±10	134±12	0.018
Maximum HR	154±12	152±14	0.859
Apnea/day	0.4±1.0	2.1±3.1	0.011

Bradycardia/day	0.2±0.6	0.1±0.3	0.655
Desaturation/day	0.5±1.0	1.9±2.3	0.006

Data is presented as means ± standard deviations.

Abbreviations: HR, heart rate.